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THE
ONTARIO WATER RESOURCES
COMMISSION

WATER POLLUTION SURVEY

of the

POLICE VILLAGE OF DORCHESTER

in the

COUNTY OF MIDDLESEX

1968

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POLICE VILLAGE OF DORCHESTER
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COUNTY OF MIDDLESEX

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**TD
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Report on a water pollution
survey of the police village of
Dorchester, township of
Dorchester North, county of

80340

REPORT

ON A

WATER POLLUTION SURVEY

OF THE

POLICE VILLAGE OF DORCHESTER

TOWNSHIP OF DORCHESTER NORTH

COUNTY OF MIDDLESEX

1968

DISTRICT ENGINEERS BRANCH

DIVISION OF SANITARY ENGINEERING

ONTARIO WATER RESOURCES COMMISSION

REPORT

INTRODUCTION

A water pollution survey was conducted in the Police Village of Dorchester on August 23, 1967 to ascertain whether conditions exist which may cause pollution of the South Branch of the Thames River as it flows through Dorchester.

This survey is in keeping with the functions of the Ontario Water Resources Commission in its programme to control pollution of all surface and ground water in the province. The procedure followed is to examine these waters to find all sources of pollution and to initiate an abatement programme where there is an impairment of the quality of the water. In this way, an effort is being made to ensure a water quality which will make these waters useful for such purposes as sources of domestic water supply, fish and wildlife, recreation, agriculture, industry, navigation and all riparian activities.

GENERAL

The Police Village of Dorchester, with a population of 1,073 (1967 Municipal Directory) is situated in the Township of Dorchester North, County of Middlesex.

The community is located on the banks of the South Branch of the Thames River approximately ten miles east of the City of London. This river is the recipient of general drainage from Dorchester.

WATER SUPPLY

The police village is supplied by a municipal water supply system and two private systems.

(i) Municipal Water System

The water for the municipal supply is obtained from a drilled well and distributed, without treatment, to approximately 330 services.

(ii) Don Mar Private Water Supply

The water for this system is obtained from two drilled wells. It is aerated and settled for hydrogen sulphide and iron removal and is chlorinated prior to distribution.

(iii) Brooks Private Water System

Water supply from a single drilled well, is treated for hydrogen sulphide removal and batch chlorinated prior to distribution.

WATER POLLUTION

Sanitary Waste Disposal

The Police Village of Dorchester does not have a municipal sewage treatment works. Individual septic tank systems are utilized to dispose of sanitary wastes.

Information obtained at the time of the survey indicated that some septic tanks were discharging to the watercourse via private drains and direct connections to surface water drains.

Refuse Disposal

The municipal refuse disposal area is located approximately three miles south of the South Branch of the Thames River on Lot 18, Concession 1, Township of Dorchester North.

A small tributary of the Thames River flows approximately 50 feet north of the site and this stream was reported to be dry during most of the year. However, a dyke has been constructed to ensure that surface water drainage from the disposal area would not gain access to this watercourse. At the present time, no apparent pollution problem is being created by the refuse disposal operations.

WATER QUALITY ANALYSES

As a measure in locating and assessing the degree of pollution being discharged from Dorchester, water samples were collected, where possible, from the flows of all known surface water drains and storm sewers. Representative samples were also collected from the receiving waters in the area.

The sanitary chemical analyses and results of bacteriological examinations of samples collected are listed in Tables I and II. The locations of sampling points are designated on the accompanying map by watercourse mileage distances from the mouth of the Thames River.

INTERPRETATION OF RESULTS

For convenience in the interpretation of laboratory analyses results, the Ontario Water Resources Commission water

quality objectives for surface water drains and watercourses are listed as follows:

(i) Surface Water Drains

5-day BOD (Biochemical Oxygen Demand)
-not greater than 15 parts per million (ppm)

Suspended Solids
-not greater than 15 parts per million (ppm)

Coliform Count (Membrane Filter)
-not greater than 2,400 per 100 millilitres

Anionic Detergents (ABS)
- the presence of anionic detergents in water samples usually indicates pollution from domestic sources

(ii) Watercourses

5-day BOD (Biochemical Oxygen Demand)
-not greater than 4 parts per million (ppm)

Coliform Count (Membrane Filter)
-not greater than 2,400 per 100 millilitres

SIGNIFICANCE OF ANALYSES

Storm and Surface Water Drains

A total of fifteen storm and surface water drain outfalls were located. Of these, only seven contained flow. A resumé of the sample results attached to this report indicates that contaminated water is being discharged to the river from the following locations:

- (i) (TS-138.96 W) - Ann St. outfall
- (ii) (TS-138.89 W) - Dorchester Rd. outfall
- (iii) (TS-138.8 W₂) - Bridge St. outfall - N.W. of the bridge
- (iv) (TS-138.62 W) - Richmond St. outfall

Specific attention is being drawn to samples (TS-138.89W)

and (TS-138.62W). In these samples coliform bacteria were extremely abundant (5,000,000 and 160,000 per 100 ml respectively as compared to OWRC objectives of 2,400 per 100 ml). Coliform bacteria are indicators of pollution of faecal origin. In addition, the demand for oxygen, measured as BOD, was high for a liquid outfalling to a stream. The presence of anionic detergents in these samples also confirmed the pollution to be of a domestic nature, probably being discharged from inadequate sewage systems.

SUMMARY AND CONCLUSIONS

A water pollution survey was conducted in the Police Village of Dorchester in the summer of 1967. Samples were collected from storm sewers, surface water drains and representative points in the South Branch of the Thames River.

Results of sample analyses indicate that domestic sewage was gaining access to some storm and surface water drains and subsequently to the South Branch of the Thames River. The pollution is most likely due to inadequate septic tank systems and private drains directly connected to storm and surface water drains.

Since this contamination is not too extensive and since soil conditions in many parts of Dorchester are relatively good, the pollution problem could probably be resolved by corrections to septic tank systems on an individual basis.

RECOMMENDATIONS

The Police Village of Dorchester should take positive measures to ensure that all private drains which discharge inade-

quately treated sewage into any surface water drain, ditch or watercourse be located and severed.

This action will further necessitate that each property owner provide adequate means for the treatment of his own wastes.

Prepared by

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AB/jg

TABLE I

POLICE VILLAGE OF DORCHESTER - WATER QUALITY SURVEY

Sampling Point No.	Description	5-day BOD (ppm)	SOLIDS (ppm)			Anionic Detergents as ABS (ppm)	M.F. Coliform Count/100 ml
			Total	Susp.	Diss.		
TS-139.42	Thames River 250 feet N. of Byron Ave.	1.1	420	22	398	0.0	470
TS-138.8	Thames River at Bridge Street	1.8	456	22	434	0.0	1,500
TS-138.68	Mill Pond at Hamilton Road	1.8	314	2	312	0.0	360
TS-138.43	Thames River west of village	1.6	410	6	404	0.0	860

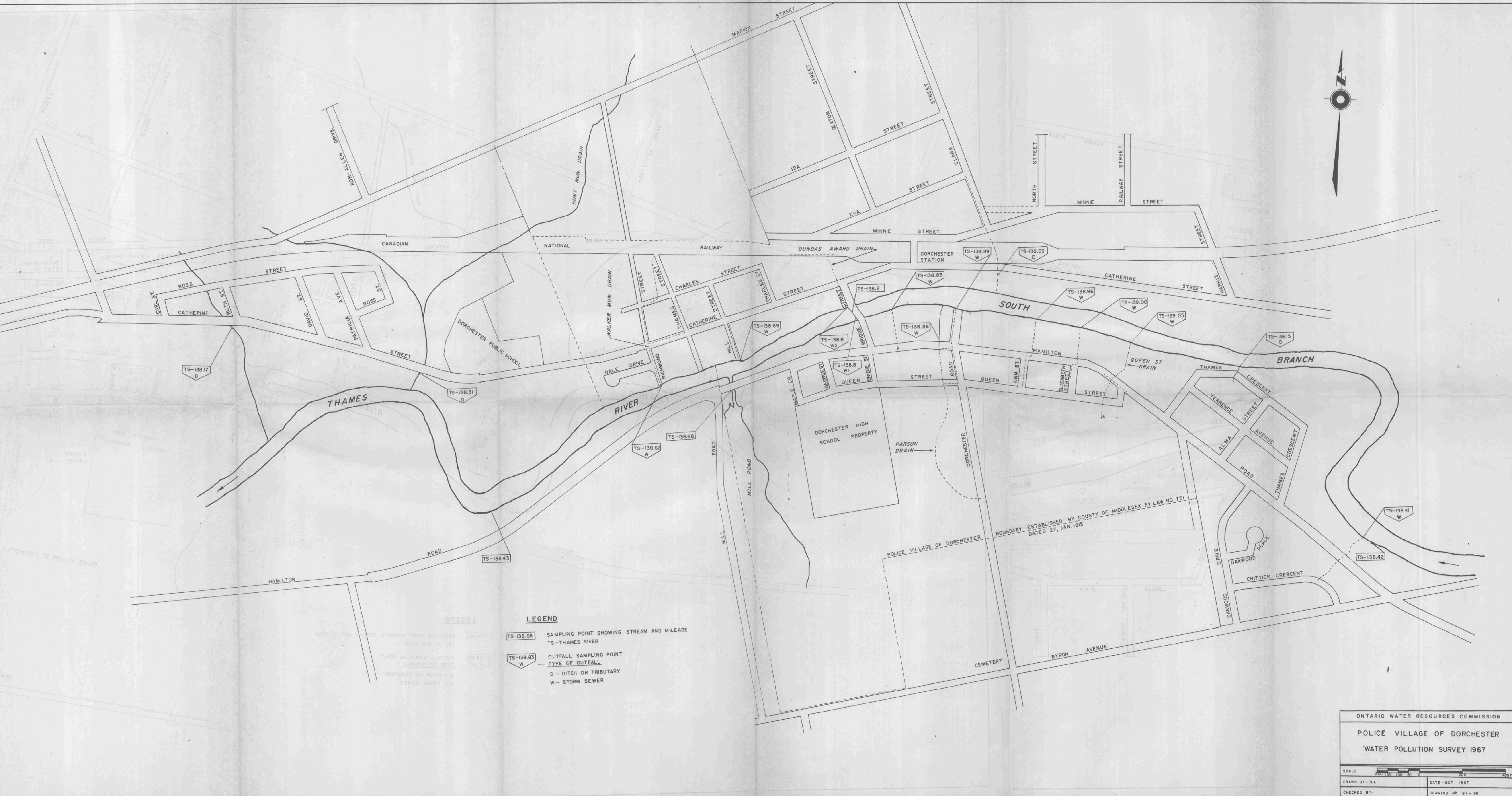
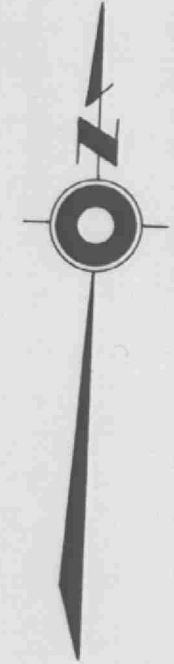
TABLE II

POLICE VILLAGE OF DORCHESTER - WATER POLLUTION SURVEY

Sampling Point No.	Description	5-day BOD (ppm)	SOLIDS (ppm)			Anionic Detergents as ABS (ppm)	M.F. Coliform Count/100 ml
			Total	Susp.	Diss.		
TS-139.41W	Storm Sewer-300 feet north of Byron Ave.		No flow at time of inspection.				
TS-139.15D	Ditch-200 feet North- west of Alma Street		"	"	"	"	"
TS-139.05W	Queen St. Drain		"	"	"	"	"
TS-139.00W	Elizabeth St. outfall		"	"	"	"	"
TS-138.96W	Ann St. outfall	5.1	660	115	545	0.0	12,000
TS-138.93D	Ditch at Catherine St. S. of Clara St.	2.2	592	27	565	0.1	5,800
TS-138.89W	Dorchester Rd. outfall	15.0	810	13	797	1.9	5,000,000
TS-138.88W	Outfall - just west of Dorchester Rd.		No flow at time of inspection.				
TS-138.83W	Outfall - E. of Bridge St.		"	"	"	"	"
TS-138.8W ₁	Bridge St. outfall - S.W. of bridge		"	"	"	"	"
TS-138.8W ₂	Bridge St. outfall - N.W. of bridge	1.6	634	11	623	0.1	260,000

TABLE II (Cont'd)

Sampling Point No.	Description	5-day BOD (ppm)	SOLIDS (ppm)			Anionic Detergents as ABS (ppm)	M.F. Coliform Count/100 ml
			Total	Susp.	Diss.		
TS-138.69W	Hill St. outfall		No flow at time of inspection.				
TS-138.62W	Richmond St. outfall	24.0	662	13	649	1.9	160,000
TS-138.31D	Hunt Municipal Drain at Catherine St.	3.1	452	14	438	0.1	1,600
TS-138.17D	Ditch - 50 feet W. of Ruth Street	2.2	770	56	714	0.6	5,600



LEGEND

TS-138.68 SAMPLING POINT SHOWING STREAM AND MILEAGE
TS-THAMES RIVER

TS-138.83 W OUTFALL SAMPLING POINT
TYPE OF OUTFALL
D - DITCH OR TRIBUTARY
W - STORM SEWER

ONTARIO WATER RESOURCES COMMISSION

POLICE VILLAGE OF DORCHESTER
WATER POLLUTION SURVEY 1967

SCALE 200 150 100 50 0 250 400 FT.

DRAWN BY: DH. DATE: OCT. 1967

CHECKED BY: DRAWING NO. 67-86